

Education

University of Washington

Seattle, USA

Ph.D. in Biostatistics

September 2022 - Present

- 3rd Year PhD Student.

University of Dhaka

Dhaka, Bangladesh

Master of Science (M.S.) in Applied Statistics

2021 - 2023

- **M.S. Thesis:** On the estimation of robust variance in penalized GEE for nearly separated longitudinal binary data with small samples. [Supervisor: [Dr. M Shafiqur Rahman](#)]

University of Dhaka

Dhaka, Bangladesh

Bachelor of Science (B.S.) in Applied Statistics

2017 - 2021

- **Relevant Coursework:** Generalized linear models; Survival Analysis; Bayesian Statistics; Time Series; Sampling Methods; Multivariate statistics: PCA, FA, Classification, Clustering; Epidemiology; Population Studies and Demography, Econometric modeling.
- **B.S. Project:** Impact of Child's Cognitive and Social-Emotional Difficulties on Child Abuse using classification trees and generalized linear models [[published](#)]

Research Experience

Graduate Research Assistant and ITCR Resource Developer

September 2022 - Present

FH Data Science Lab, Fred Hutch Cancer Research Center

- Supervisor: [Jeffrey T. Leek](#)
- **Project 1:** Evaluating impact of biomedical research software
 - Paper:** Best practices to evaluate impact of biomedical research software: metric collection beyond citations [[published](#)]
 - Software:** Developed web platform for Informatics Technology for Cancer Research (ITCR) website.
- **Project 2:** *Valid statistical inference with Machine Learning/Artificial Intelligence (ML/AI) generated Predicted/Synthetic Data*
 - Paper 1:** Do We Really Even Need Data? [[arXiv preprint](#)]
 - Paper 2:** ipd: an R package for conducting inference on predicted data [[published](#)]
 - Paper 3:** Sample size considerations for Post-Prediction Inference [[manuscript under review](#)]
 - Paper 4:** Valid Inference on Predicted Survival (VIPS) [[working paper](#)]
 - Paper 5:** A modern look at drawing Statistical Inference on ML/AI generated Synthetic Data [[Harvard Data Science Review: invited working paper](#)]
 - Software:** Co-author of R-package: ipd [[github](#)] [[CRAN](#)]

Undergraduate Research Assistant

June 2020 - December 2020

Institute of Statistical Research and Training, University of Dhaka

- Supervisors: [Mohaimen Mansur](#) and [Iftakhar Alam](#)
- **Project:** Early Childhood Development of Bangladeshi Children

Independent and Collaborative Research Projects

- **Project:** Analysis of treatment effect in the presence of covariate-dependent missing data in Cluster Randomized Trials (CRT), mentored by [Dr. Anower Hossain](#), University of Warwick.
- **Collaborative public health project topics:** COVID-19, Intimate partner violence, women's reproductive healthcare, children and adolescent health.

Publications

Published

- Salerno S, Miao J, **Afiaz A**, Hoffman K, Neufeld A, Lu Q, McCormick TH, Leek JT. ipd: An R Package for Conducting Inference on Predicted Data. *Bioinformatics*. 2025 Feb 3;btaf055. DOI: [10.1093/bioinformatics/btaf055](https://doi.org/10.1093/bioinformatics/btaf055).
- **Afiaz A**, Ivanov A, Chamberlin J, . . . , Leek JT, Wright C (2024) Best practices to evaluate the impact of biomedical research software - metric collection beyond citations . *Bioinformatics* 40(8). DOI: [10.1093/bioinformatics/btae469](https://doi.org/10.1093/bioinformatics/btae469).
- Biswas RK, **Afiaz A**, Huq S, Bhuiyan FM, Kabir E (2023). Public opinion on COVID-19 vaccine prioritization in Bangladesh: Who gets the vaccine and whom do you leave out? *Vaccine* 41(34); DOI: [10.1016/j.vaccine.2023.06.050](https://doi.org/10.1016/j.vaccine.2023.06.050)
- Biswas RK, **Afiaz A**, Huq S, Bhuiyan FM, Kabir E (2023). Public opinion on COVID-19 pandemic in Bangladesh: disruption to public lives and trust in government's immunisation performance. *Int J Health Plann Mgmt* 1-16; DOI: [10.1002/hpm.3721](https://doi.org/10.1002/hpm.3721)
- Mansur M, **Afiaz A**, Hossain MS (2021). Sociodemographic risk factors of under-five stunting in Bangladesh: Assessing the role of interactions using a machine learning method *PLOS One*, 16(8), e0256729. DOI: [10.1371/journal.pone.0256729](https://doi.org/10.1371/journal.pone.0256729)
- **Afiaz A**, Arusha AR, Ananna N, Kabir E, Biswas RK (2021). A national assessment of elective cesarean sections in Bangladesh and the need for health literacy and accessibility *Scientific Reports*, 11(1), 1-12. DOI: [10.1038/s41598-021-96337-0](https://doi.org/10.1038/s41598-021-96337-0)
- **Afiaz A**, Biswas RK (2021). Awareness on menstrual hygiene management in Bangladesh and the possibilities of media interventions: using a nationwide cross-sectional survey *BMJ Open*, 11(4), e042134. DOI: [10.1136/bmjopen-2020-042134](https://doi.org/10.1136/bmjopen-2020-042134)
- **Afiaz A**, Masud MS, Mansur M (2021). Impact of child's cognitive and social-emotional difficulties on child abuse: Does mother's justification of intimate partner violence also play a role?. *Child Abuse & Neglect*, 117, 105028. DOI: [10.1016/j.chiabu.2021.105028](https://doi.org/10.1016/j.chiabu.2021.105028)
- **Afiaz A**, Biswas RK, Shamma R, Ananna N (2020). Intimate partner violence (IPV) with miscarriages, stillbirths and abortions: Identifying vulnerable households for women in Bangladesh. *PLOS One* 15(7): e0236670. DOI: [10.1371/journal.pone.0236670](https://doi.org/10.1371/journal.pone.0236670)
- Biswas RK, **Afiaz A**, Huq S (2020). Underreporting COVID-19: the curious case of the Indian subcontinent. *Epidemiology and Infection*, 148, E207. DOI: [10.1017/S0950268820002095](https://doi.org/10.1017/S0950268820002095)
- Biswas RK, Huq S, Afiaz A, Khan HT (2020). A systematic assessment on COVID-19 preparedness and transition strategy in Bangladesh. *Journal of evaluation in clinical practice*. 26(6):1599-611. DOI: [10.1111/jep.13467](https://doi.org/10.1111/jep.13467).
- Biswas RK, Huq S, **Afiaz A** (2020). Relaxed lockdown in Bangladesh during COVID-19: should economy outweigh health? *International Journal of Health Policy and Management*, 9(11), 488-490; DOI: [10.34172/ijhpm.2020.98](https://doi.org/10.34172/ijhpm.2020.98).

Pre-prints/under review

- Hoffman K, Salerno S, **Afiaz A**, Leek JT, McCormick TH (2024) Do We Really Even Need Data? (*arXiv pre-print*).
- Salerno S, Hoffman K, **Afiaz A**, Leek JT, McCormick TH (2024) Sample size considerations for Post-Prediction Inference (*Manuscript under review*).
- Jitu MHI, **Afiaz A**, Biswas RK (2024) More Than Just Visits: Timing, Frequency, and Determinants of Effective Antenatal Care in Bangladesh - BDHS 2007 to 2017-18 (*Manuscript under review*).
- Jitu MHI, Biswas RK, **Afiaz A**, (2024) The joint effect of mother and child's functional difficulties on anxiety and depression among children (*Manuscript accepted*).
- Biswas RK, **Afiaz A**, Jitu MHI, Chowdhury B, Sultana S, Moosa A, Kabir E, Bhowmik J, Koemel NA, Fontana L (2025) Prevalence of hypertension and diabetes in Bangladesh: Identifying the unaware and misinformed from the recent national survey (*Manuscript under review*).
- Biswas RK, **Afiaz A**, Koemel NA, Fontana L (2025) Reevaluating Body mass index thresholds for NCD surveillance in South and Southeast Asia (*Manuscript under review*).

Teaching Experience

Graduate Teaching Assistant

University of Washington

September 2024 - June 2025

- BIOST 511: Medical Biometry I (Autumn 2024)
- BIOST 512: Medical Biometry II (Winter 2025)
- BIOST 513: Medical Biometry III (Spring 2025)

Graduate Student Tutor

Institute of Statistical Research and Training (ISRT), University of Dhaka

January 2022 - June 2022

- Mathematics and Statistics tutor for undergraduate courses: ASTAT 101: Elements of Applied Statistics; AST 102: Probability; AST 105: Calculus, AST 107: Linear Algebra, AST 201: Sampling Distributions, AST 203: Statistical Inference I; AST 204: Design of Experiments I; AST 206: Sampling Methods I.

Online Student Instructor and Tutorial Maker

10 Minute School

January 2017 - December 2021

- Created **300+ video tutorials on mathematics and statistics** for national curriculum based students. Available for free on the [YouTube](#) channel of 10 Minute School.
- Conducted **10+ online Live Classes** on Facebook and [YouTube](#) teaching over a million students to date.

Industry Experience

10 Minute School (Edu-Tech)

Dhaka, Bangladesh

Department Lead: Quality Assurance and Control (QAC)

September 2017 - December 2021

- Spearheaded the QAC department with **over 25 employees** for the largest education platform in Bangladesh.
- Successful supervision of creation and review of **19,018 video tutorials, 837 online-based smartbooks and 6,400 academic quizsets**.

Skills

Software skills

- Statistical software: **R** (proficient), **STATA** (intermediate), **SPSS** (intermediate), **SAS** (beginner).
- Proficient in **RMarkdown/Quarto, LaTeX** and **Microsoft Office/Google Suite**.

Technical skills

- Data analysis and visualization in using **tidyverse** family and **ggplot2** packages.

Awards and Honors

2023	Biostatistics Retention and Success Scholarship , Department of Biostatistics	Univ of Washington
2022	Pat Wahl Award , Recognition of commitment to strategic use of online technologies to reach diverse communities for disseminating education.	Univ of Washington
2022	Excellence Award , Awarded by UW School of Public Health	Univ of Washington
2022	Dean's Merit Award , Faculty of Sciences awardee for obtaining the highest GPA (4.0) across all departments in B.S. Honors	University of Dhaka
2022	Govt. Honours Scholarship , Talent pool, ranked 1st in Faculty of Sciences	University of Dhaka
2021	ISRT Golden Jubilee Gold Medal Award 2021 , for graduating top of the class with GPA (4.0)	University of Dhaka
2019	ISRT Merit Stipend , Institute of Statistical Research and Training	University of Dhaka

Conferences & Presentations

45th Conference of the International Society for Clinical Biostatistics (ISCB)

Thessaloniki, Greece

Oral Presentation

21-25 July 2024

- **Award:** Winner of ISCB Student Conference Paper Award
- **Funds:** Conference travel, registration, accommodation.
- **Talk:** *Optimal Sandwich Variance Estimator in Penalized GEE for Nearly Separated Longitudinal Binary Data with Small Samples.*

ENAR 2024 Spring Meeting

Baltimore, MD, USA

Oral Presentation

10-13 March, 2024

- **Talk:** *Optimal Sandwich Variance Estimator in Penalized GEE for Nearly Separated Longitudinal Binary Data with Small Samples.*

2nd International Conference on Applied Statistics (ICAS) 2019

University of Dhaka, Bangladesh

Poster presentation

December, 2019

- **Poster:** *Intimate partner violence (IPV) with miscarriages, stillbirths and abortions: Identifying vulnerable households for women in Bangladesh.*

Research Talks

Institute of Statistical Research and Training, University of Dhaka

Dhaka, Bangladesh

Invited Session

18 September 2024

- **Talk:** *Optimal Sandwich Variance Estimator in Penalized GEE for Nearly Separated Longitudinal Binary Data with Small Samples.*

Professional Services

Academic reviewer

- PLOS One; Midwifery; Child Abuse & Neglect; Journal of Family Violence; Early Child Development & Care.

Professional Affiliations

Member **Western North American Region (WNAR)**, International Biometric Society

2023 - Present

Member **Eastern North American Region (ENAR)**, International Biometric Society

2023 - Present

University Services and Activities

Member **Graduate Student Representative**, Department of Biostatistics, University of Washington

Sep 2022 - Present

Member **Biostatistics Communications/Alumni Relations Committee**, University of Washington

Sep 2022 - Aug 2024